



# Valens Colligo VS2310 Product Brief



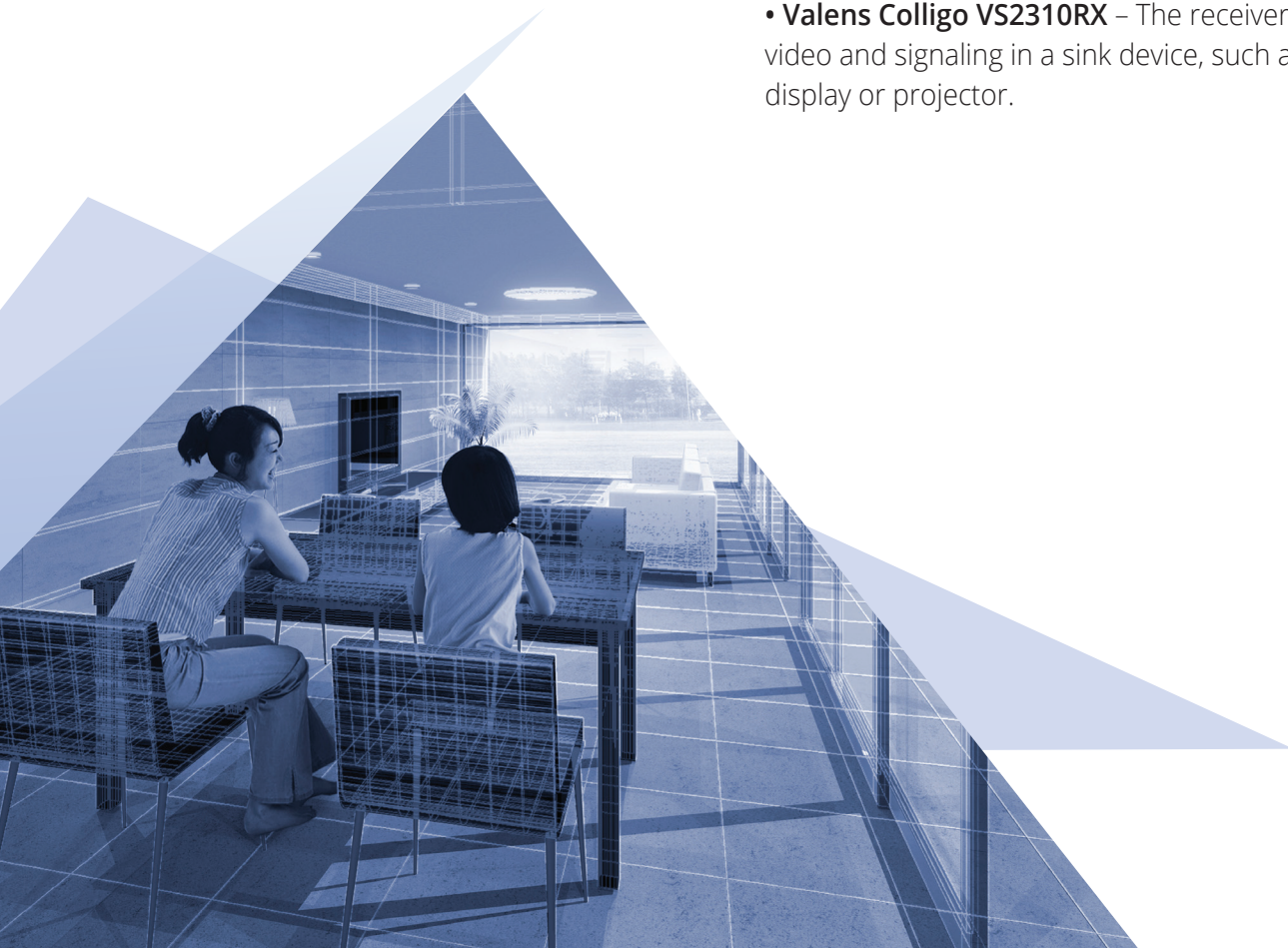
# Overview

The Valens Colligo VS2310 is a high-end 5Play chipset that includes native USB 2.0 support and inter-device connectivity. The Valens Colligo VS2310 chip's proprietary HDI digital interfaces enable true multistreaming and daisy-chaining. The Valens Colligo VS2310 fully complies with the HDBaseT™ 2.0 Specification and supports the 5Play feature set for relaying audio, video, control, Ethernet, and power over a single cable for up to 100m. The Valens Colligo VS2310 is also backwards compatible with the HDBaseT 1.0 Specification and all legacy HDBaseT products.

## Architecture

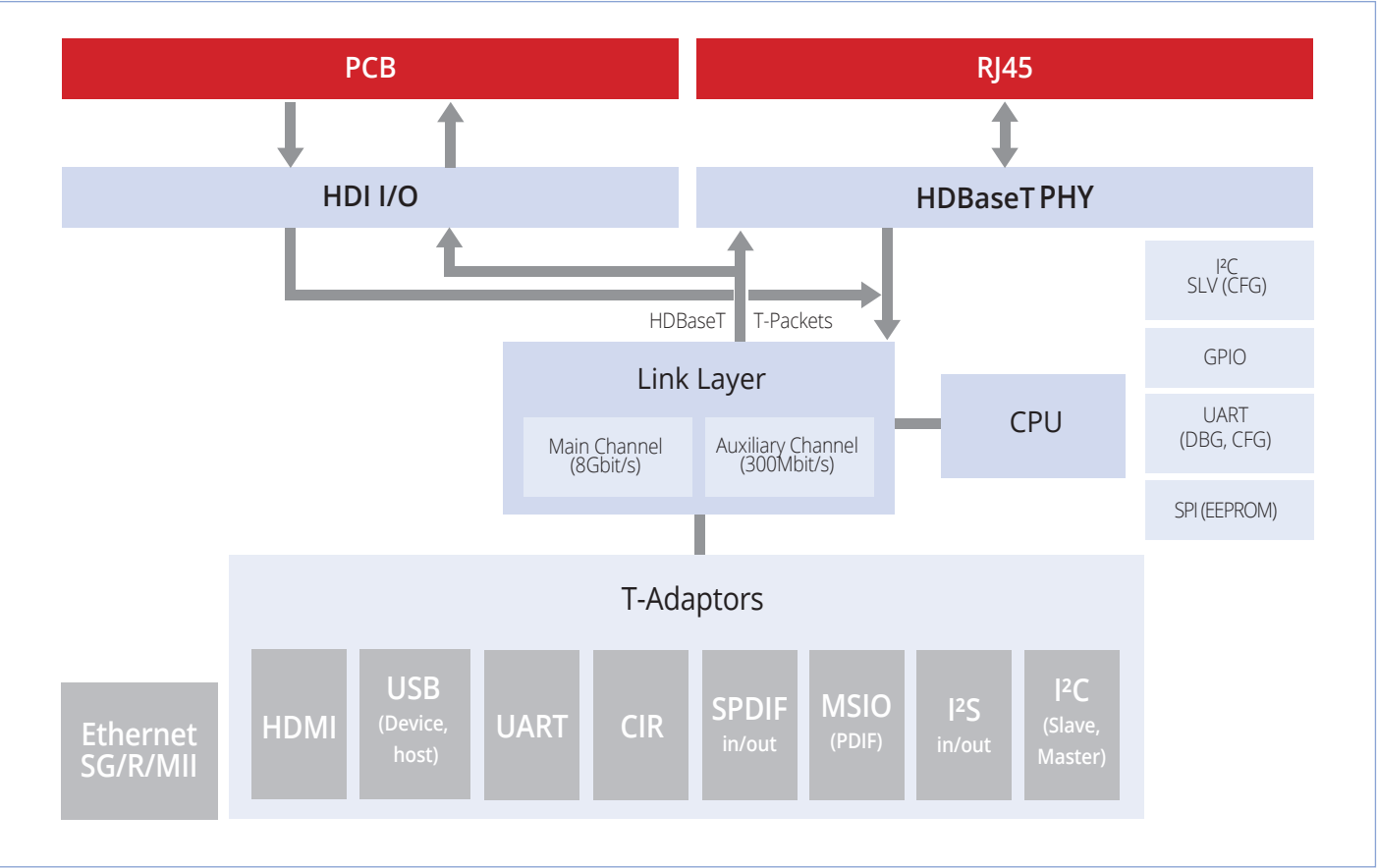
The Valens Colligo VS2310 is comprised of two integrated chips:

- **Valens Colligo VS2310TX** – The transmitter chip is used for video and signaling in a source device, such as a Blu-ray player or STB.
- **Valens Colligo VS2310RX** – The receiver is used for video and signaling in a sink device, such as an LCD display or projector.



The following block diagram illustrates the major Colligo VS2310 components:

**Valens Colligo VS2310TX/RX**

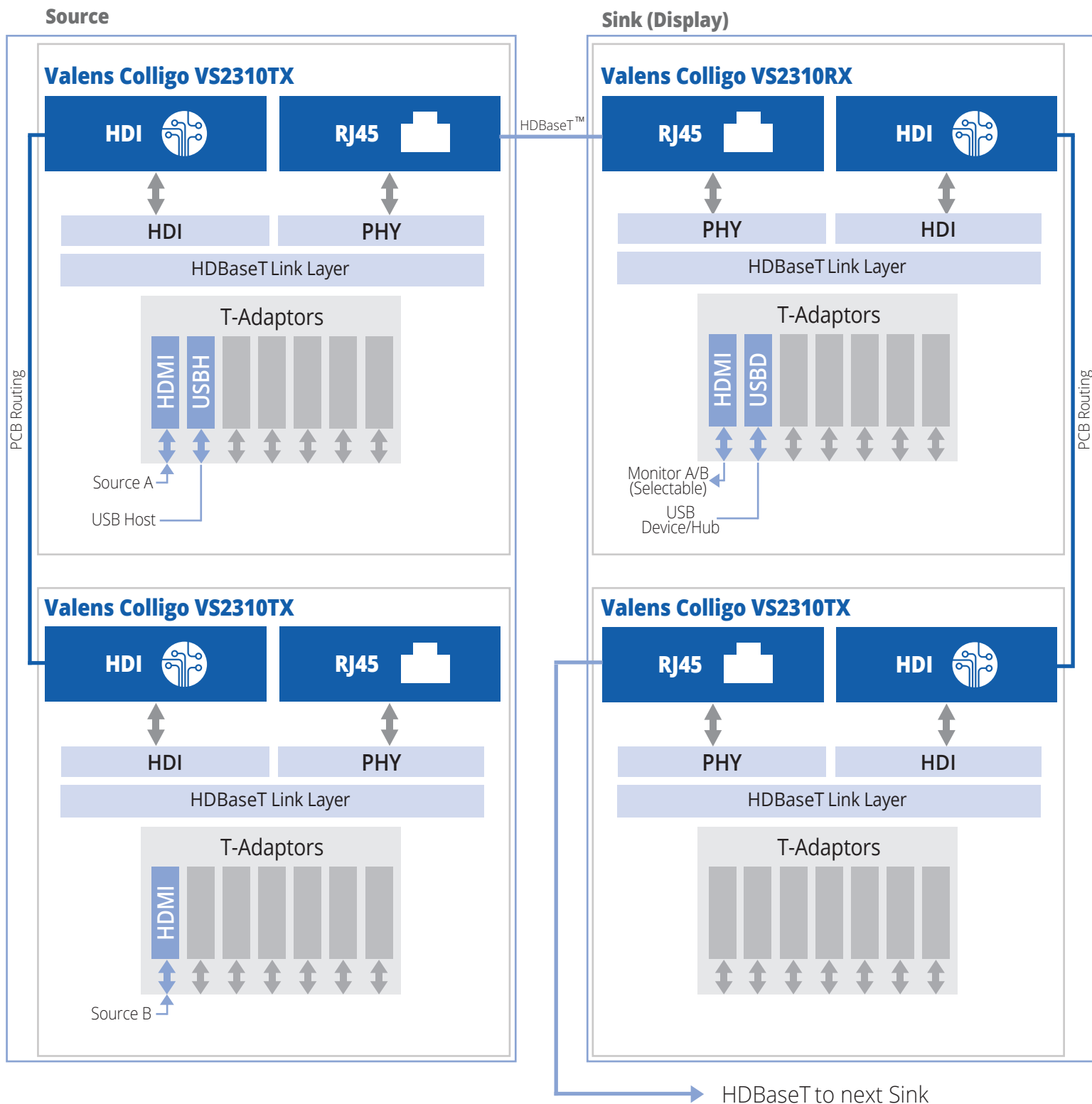




# Applications

The Valens Colligo VS2310 second generation high-end chip can be used in various applications throughout multiple industries. Main applications include HDMI/DVI extenders over CatX cables, AV matrixes, AV receivers, HD projectors, industrial PCs, single wire TVs, two-box TVs, digital signage displays, multi-stream video switching/distribution/aggregation, daisy-chaining, and more.

The following diagram illustrates HDBaseT Spec 2.0 in a multistream/daisy-chain video system:



# Key Technical Highlights

Parameter	Value
Video Interfaces	Fully compliant with HDMI 1.4 and HDMI 2.0. EDID adjustment mechanism for HDMI 2.0 at pixel clock higher than 340MHz Glueless interface to TMDS, DDC, CEC, and HPD HDMI signals
HDMI Interface	100m Cat6 uncompressed HD video: <ul style="list-style-type: none"> <li>• 4K / 2K, 30Hz, 24bpp</li> <li>• 4K / 2K, 60Hz, 24bpp with 4:2:0 pixel format</li> </ul> 150m in long-reach mode: <ul style="list-style-type: none"> <li>• 148.5Mhz HDMI pixel frequency</li> <li>• 1080p, 60Hz, 24bpp – uncompressed</li> </ul>
Audio Interfaces	All formats supported by HDMI 1.4 and HDMI 2.0 All major digital audio formats, including: Dolby Digital, DTS, Dolby TrueHD, DTS HD-Master Audio, Dolby Pro Logic Iiz 7.1 & 9.1, and more Standard SPDIF, I <sup>2</sup> S
Control Interfaces	UART, IR, I <sup>2</sup> C (slave/master), MSIO-6 General Purpose fast serial channels, USB 2.0
HDII/O Interfaces	8Gbps inter-device connectivity HDBaseT packets over inter-chip connection Glueless interface to Valens Colligo VS2311 fiber optics devices
Ethernet Interfaces	100BaseT, SG/R/MII
System Interfaces	RS232, I <sup>2</sup> C slave, SPI boot EEPROM
USB 2.0	Configurable as host or device USB port, USB 2.0 standard compliant
Power	PoE (802.3af), PoE+ (802.3at), PoH
Data Rate	Auxiliary channel data rate of 300Mbps Full Duplex
Max Traffic Rate	100m – 297Mhz HDMI pixel clock 150m Long-Reach mode – 4 Gbps HDBaseT traffic rate
HDCP	Supported
Networking	End device functionality for HDBaseT Spec 2.0 networking supported
Daisy Chain	Support for daisy-chain connectivity of source and sink
Power Consumption	Sleep – Low Power Mode #1 – RX 310mW, TX 248mW Max power consumption – RX 3.8w, TX 2.4w
Junction Temp	-40°C – +125°C
Dimensions	Valens Colligo VS2310TX – Heat Slug BGA 21mm x 21mm Valens Colligo VS2310 RX – Heat Slug BGA 23mm x 23mm Ball pitch – 1.0mm TX Pin count: 356, RX Pin count: 484



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